

Joint Operations Review

California Nevada River Forecast Center
&
CA Department of Water Resources

River Forecasting Roles and Responsibilities during Floods



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Golden Guardian 2011 – FOC Workshop

Overview of River Forecasting

- What do we forecast?
- What goes into producing a forecast?
- What products are available, where and what do they mean?

River Forecasting Section

Hydrology Branch\Hydrology & Flood Operations Office\Division of Flood Management

- Authority - California Water Code (Section 236)
- In joint collaboration with National Weather Service's (NWS) California-Nevada River Forecast Center
 - Provide year-round daily forecasts of reservoir inflows, river flows, and water levels throughout California
 - Issue river and tide Forecast for 90 locations in California, parts of Nevada
 - Produce astronomical tide tables for the Sacramento-San Joaquin Delta
- Forecasts used by the Flood Operations Branch and the NWS to determine the level of joint Federal-State flood response activation and operations

Flood / Routine River Forecast Process

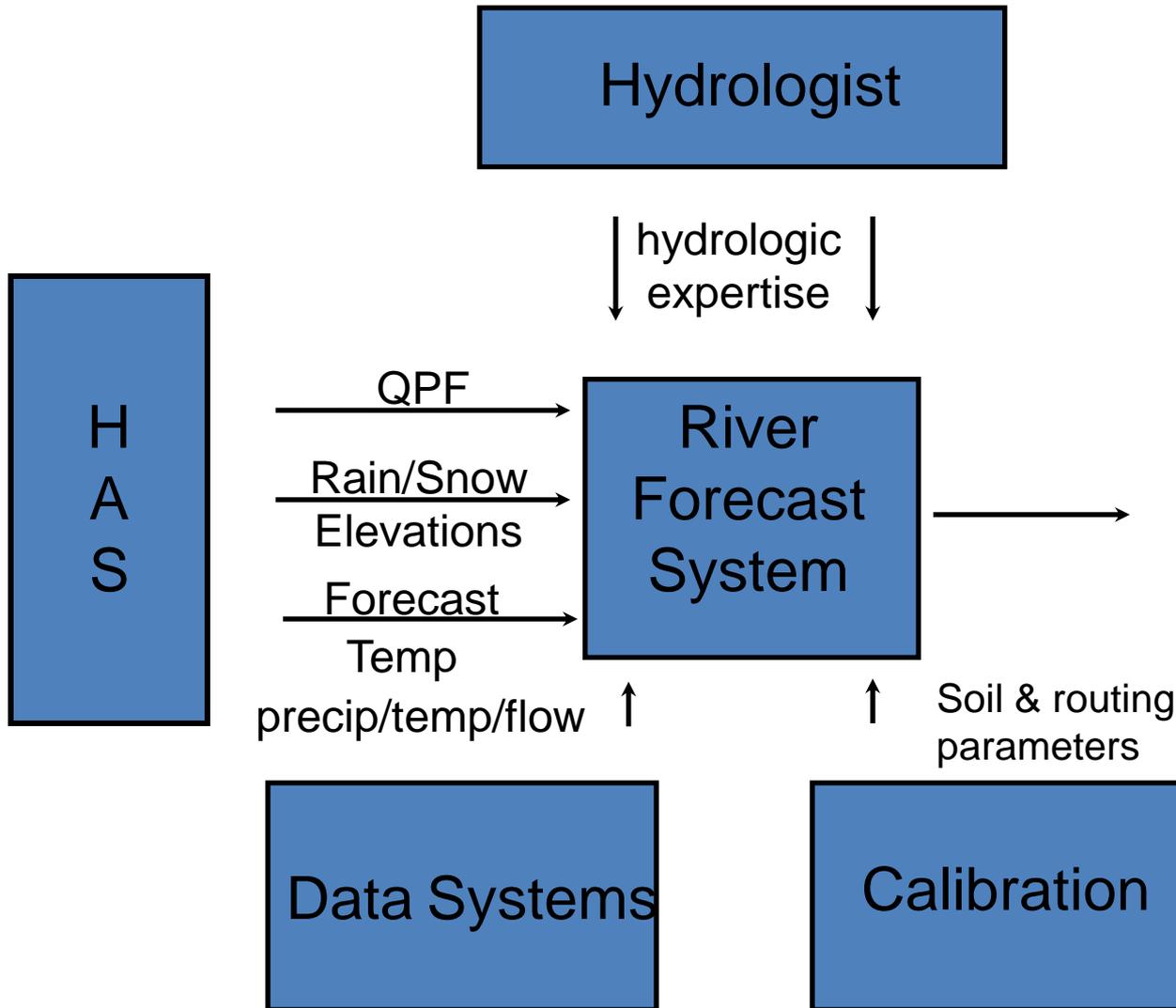
Preprocessing → Processing → Post-processing

- Data collection
- Data QC
- Mean Areal computations

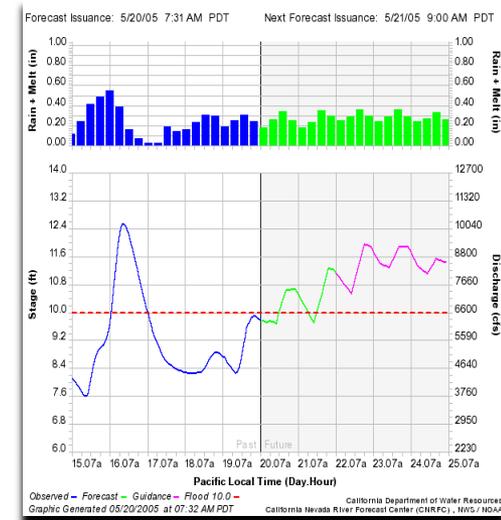
- Run model(s)
- Make adjustments
- Move downstream

- Text Forecast
- Graphical Forecast

Operational River Forecasting



Graphical River Forecast



River Forecasting

- ~225+ simulated watersheds
- ~90 forecast locations
- ~50+ reservoir inflow locations

- Updated w/each model run
 - 2x / day winter weekdays
 - 1x / day summer weekdays and weekends
 - 4x / day during flood events

<http://www.cnrfc.noaa.gov/>

http://cdec4gov.water.ca.gov/guidance_plots/



Example – Graphical Forecast

SAN JOAQUIN RIVER - VERNALIS (VNSC1)

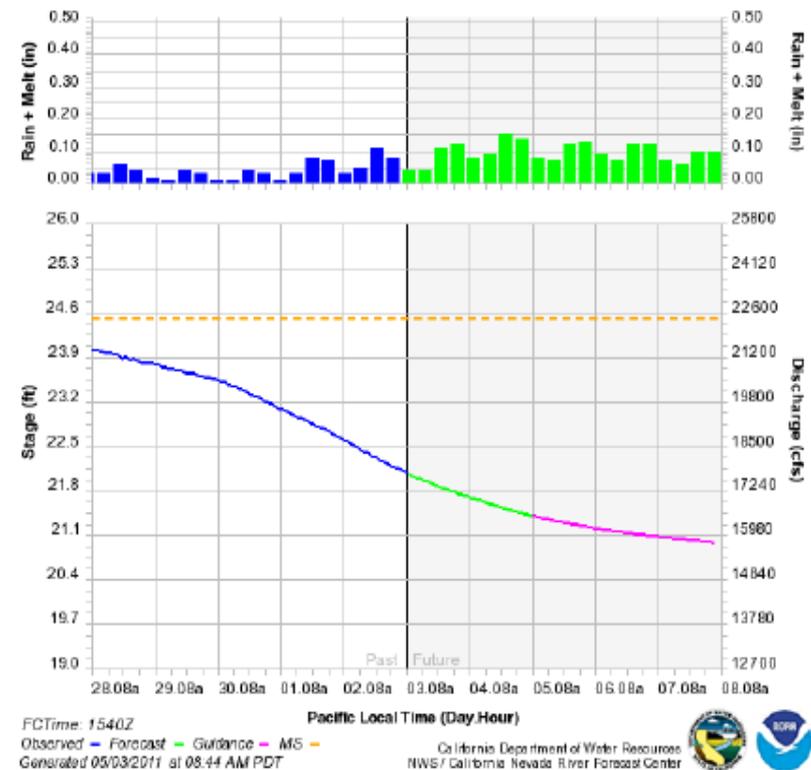
Latitude: 37.68° N Longitude: 121.27° W Elevation: 35 Feet

Location: San Joaquin County in California River Group: San Joaquin

Issuance Time: May 04 2011 at 8:45 AM PDT Next Issuance: May 05 2011 at 9:00 AM PDT

Monitor Stage: 24.5 Feet Flood Stage: 29.0 Feet Danger Stage: 29.5 Feet

- Graphical
 - -/+ 5 days
 - Observed + Forecast + Guidance
 - Available
 - CNRFC Website
 - CDEC Website
 - Interpretation
 - Online help
 - 1 page flier



<http://www.cnrfc.noaa.gov/graphicalRVF.php?id=VNSC1>

http://cdec.water.ca.gov/guidance_plots/

Example – Text Forecast

SAN JOAQUIN RIVER - VERNALIS (VNSC1)

Latitude: 37.68° N Longitude: 121.27° W Elevation: 35 Feet
Location: San Joaquin County in California River Group: San Joaquin

Issuance Time: May 04 2011 at 8:45 AM PDT Next Issuance: May 05 2011 at 9:00 AM PDT

Monitor Stage: 24.5 Feet Flood Stage: 29.0 Feet Danger Stage: 29.5 Feet

Tabular River Observed & Forecast - Hydrograph Information

#

File Generation Time: 05/04/2011 08:46 AM PDT

Interval: 1 Hour

#

Most Recent Date & Time of Maximum Observed: 04/29/2011 08 AM PDT

Maximum Observed Stage: 23.8 Feet

Maximum Observed Flow: 20960 cfs

#

Earliest Date & Time of Maximum Forecast: 05/04/2011 09 AM PDT

Maximum Forecast Stage: 21.6 Feet

Maximum Forecast Flow: 16920 cfs

#

OBSERVED

#

Date & Time (Local) Stage (Feet) Flow (cfs) Trend Observed Status

#

04/29/2011 08 AM PDT	23.8	20960		Normal
04/29/2011 09 AM PDT	23.8	20940	-	Normal
04/29/2011 10 AM PDT	23.8	20900	-	Normal
04/29/2011 11 AM PDT	23.7	20880	-	Normal
04/29/2011 12 PM PDT	23.7	20860	-	Normal
04/29/2011 01 PM PDT	23.7	20820	-	Normal
04/29/2011 02 PM PDT	23.7	20800	-	Normal
04/29/2011 03 PM PDT	23.7	20800	0	Normal
04/29/2011 04 PM PDT	23.7	20760	-	Normal
04/29/2011 05 PM PDT	23.7	20760	0	Normal
04/29/2011 06 PM PDT	23.7	20760	0	Normal
04/29/2011 07 PM PDT	23.7	20720	-	Normal
04/29/2011 08 PM PDT	23.7	20700	-	Normal
04/29/2011 09 PM PDT	23.6	20680	-	Normal
04/29/2011 10 PM PDT	23.6	20680	0	Normal

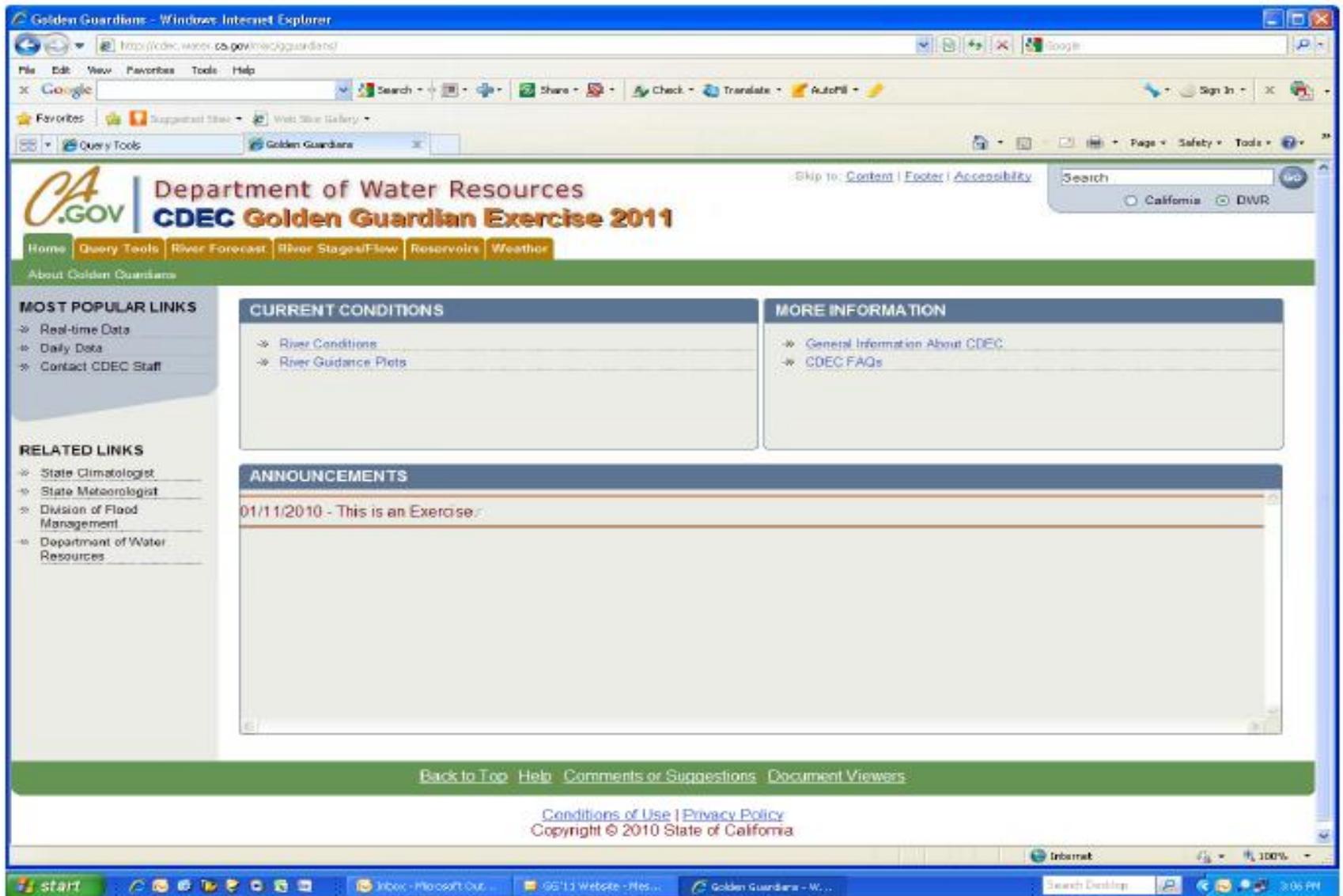
Information Dissemination

River Forecast Tabs

River Forecast for Individual Locations

The screenshot shows the California Data Exchange Center website in a Windows Internet Explorer browser. The address bar displays <http://cdec4gov.water.ca.gov/>. The website header includes the CA.gov logo and the text "Department of Water Resources California Data Exchange Center". A navigation menu contains tabs for Home, Query Tools, Precipitation, River Forecast, River Stages/Flow, Reservoirs, Snow, Stations, and Weather. The "River Forecast" tab is highlighted. Below the navigation menu, there are several content sections: "MOST POPULAR LINKS" with a list of links including "Executive Summary", "Real-time Data", "Daily Data", "Monthly Data", "Historical Data", "Data Plotter", "Station Search", "Station Locator", "Daily Water Temperatures", "Reports", "Other Related Data Sources", and "Contact CDEC Staff"; "CURRENT CONDITIONS" with links for "River Conditions", "River Guidance Plots", "Water Supply", and "Statewide Water Conditions"; "MORE INFORMATION" with links for "What's New", "General Information About CDEC", "CDEC FAQs", "Flood System Inspection Reports", and "2009 Local Agency Annual Report (AB156)"; "ANNOUNCEMENTS" with three entries: "04/04/2011 - 10-Day Feather River QPF", "04/04/2011 - The Next weather briefing will be in the flood center on Thursday, April 7, 2011, at 10AM", and "03/29/2011 - Flood Alert Rescinded"; and "BROWSE CDEC" with a grid of letters A through Z. The footer contains links for "Back to Top", "Help", "Comments or Suggestions", and "Document Viewers". The browser's taskbar at the bottom shows the start button, several open applications, and the system clock at 4:43 PM.

<http://cdec.water.ca.gov/>



<http://cdec.water.ca.gov/misc/guardians/>

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Questions?